

group consisting of straight run asphalts, oxidized asphalts, solvent washed asphalts, road tars, refined tars or mixtures thereof, said modifying polymer including a material selected from the group consisting of styrene-butadiene-styrene block co-polymer, atactic polypropylene or mixtures thereof, said continuous matrix of modified bitumen having a reduced amount of gas voids, said continuous matrix of modified bitumen including substantially no gas voids about 100 microns or greater in size.

20. (New) The roofing membrane as defined in claim 19, wherein said modifying polymer constitutes about 5-30 weight percent of said continuous matrix of modified bitumen.

21. (New) The roofing membrane as defined in claim 19, wherein said continuous matrix of modified bitumen includes a secondary modifying polymer selected from the group consisting of styrene-isoprene styrene, styreneethylene-butylene-styrene, styrene-ethylene or mixtures thereof.

22. (New) The roofing membrane as defined in claim 20, wherein said continuous matrix of modified bitumen includes a secondary modifying polymer selected from the group consisting of styrene-isoprene styrene, styreneethylene-butylene-styrene, styrene-ethylene or mixtures thereof.

23. (New) The roofing membrane as defined in claim 19, wherein said upper surface includes a granular material.

24. (New) The roofing membrane as defined in claim 22, wherein said upper surface includes a granular material.

25. (New) The roofing membrane as defined in claim 24, wherein said granular material includes No. 11 ceramic roofing granules.

26. (New) The roofing membrane as defined in claim 19, wherein said lower surface coated with a material to prevent self-adhesion.

27. (New) The roofing membrane as defined in claim 24, wherein said lower surface is coated with a material to prevent self-adhesion.

28. (New) The roofing membrane as defined in claim 25, wherein said lower surface is coated with a material to prevent self-adhesion.

29. (New) The roofing membrane as defined in claim 28, wherein said material to prevent self-adhesion includes a fine silica sand.

30. (New) The roofing membrane of claim 19, wherein said roofing membrane exhibits no blistering from entrained gas voids after being submerged in water at about 120° F for about 72 hours, and then maintained at about 160°F under at least about 15 inches Hg vacuum for up to about 48 hours.

31. (New) The roofing membrane of claim 29, wherein said roofing membrane exhibits no blistering from entrained gas voids after being submerged in water at about 120° F for about 72 hours, and then maintained at about 160°F under at least about 15 inches Hg vacuum for up to about

48 hours.

32. (New) A roofing membrane having an upper and lower surface formed by a process to reduce the amount of gas voids in a modified bitumen mixture that has been at least partially embedded in a fleece or mat like reinforcing material, said process including forming the modified bitumen mixture by adding and mixing a modifying polymer with bitumen while the bitumen is in a molten state to form said modified bitumen mixture, exposing said modifying polymer and said bitumen to a pressure of less than ambient during said mixing of said modifying polymer with bitumen to reduce entrained gases in said modified bitumen mixture, and applying said modified bitumen mixture to said fleece or mat like reinforcing material, said bitumen including a material selected from the group consisting of straight run asphalts, oxidized asphalts, solvent washed asphalts, road tars, refined tars or mixtures thereof, said modifying polymer including a material selected from the group consisting of styrene-butadiene-styrene block co-polymer, atactic polypropylene or mixtures thereof, said modified bitumen mixture having substantially no gas voids about 100 microns or greater in size.

33. (New) The roofing membrane as defined in claim 32, wherein said modifying polymer constitutes about 5-30 weight percent of said modified bitumen mixture.

34. (New) The roofing membrane as defined in claim 32, wherein said bitumen is maintained in a molten state and agitated during said mixing of said modifying polymer with said bitumen, said temperature of said bitumen in said molten state being at least about 300°F.

35. (New) The roofing membrane as defined in claim 33, wherein said bitumen is maintained in a molten state and agitated during said mixing of said modifying polymer with said bitumen, said temperature of said bitumen in said molten state being at least about 300°F.

36. (New) The roofing membrane as defined in claim 32, wherein said bitumen and said modifying polymer are mixed together in a mixing vessel at a pressure inside the vessel of at least about 15 inches Hg less than ambient.

37. (New) The roofing membrane as defined in claim 35, wherein said bitumen and said modifying polymer are mixed together in a mixing vessel at a pressure inside the vessel of at least about 15 inches Hg less than ambient.

38. (New) The roofing membrane as defined in claim 33, wherein said modifying polymer is mixed with said bitumen until said modifying polymer is substantially dispersed with said bitumen prior to said modifying polymer and said bitumen being exposed to a pressure of less than ambient.

39. (New) The roofing membrane as defined in claim 37, wherein said modifying polymer is mixed with said bitumen until said modifying polymer is substantially dispersed with said bitumen prior to said modifying polymer and said bitumen being exposed to a pressure of less than ambient.

40. (New) The roofing membrane as defined in claim 39, wherein said modifying

polymer is mixed with said bitumen for at least about 30 minutes until said modifying polymer is substantially dispersed with said bitumen and said modifying polymer and said bitumen are then exposed to a pressure of less than ambient for at least about 5 minutes.

41. (New) The roofing membrane as defined in claim 32, wherein a secondary modifying polymer is mixed with said modifying polymer and said bitumen to form said modified bitumen mixture, said secondary modifying polymer selected from the group consisting of styrene-isoprene styrene, styreneethylene-butylene-styrene, styrene-ethylene or mixtures thereof.

42. (New) The roofing membrane as defined in claim 40, wherein a secondary modifying polymer is mixed with said modifying polymer and said bitumen to form said modified bitumen mixture, said secondary modifying polymer selected from the group consisting of styrene-isoprene styrene, styreneethylene-butylene-styrene, styrene-ethylene or mixtures thereof.

43. (New) The roofing membrane as defined in claim 32, wherein a granular material is applied to said upper surface after said modified bitumen mixture is applied to said fleece or mat like reinforcing material.

44. (New) The roofing membrane as defined in claim 42, wherein a granular material is applied to said upper surface after said modified bitumen mixture is applied to said fleece or mat like reinforcing material.

45. (New) The roofing membrane as defined in claim 44, wherein said granular material

includes No. 11 ceramic roofing granules.

46. (New) The roofing membrane as defined in claim 32, wherein said lower surface is coated with a material to prevent self-adhesion.

47. (New) The roofing membrane as defined in claim 45, wherein said lower surface is coated with a material to prevent self-adhesion.

48. (New) The roofing membrane as defined in claim 47, wherein said material to prevent self-adhesion includes a fine silica sand.